

The claims

- 1           1.     A nozzle for providing a nitrous oxide/fuel mixture to a combustion  
2 cylinder comprising;  
3           a body member used in combination with a combustion engine having an  
4 inlet end and an outlet end, the body member defining an angular bore and a  
5 straight bore, the angular bore intersecting the straight bore and terminating at an  
6 inlet end such that fluid communication exists between the inlet end of the angular  
7 bore and the straight bore;  
8           a tube concentric with the straight bore and terminating substantially flush  
9 with the outlet end of the body member and in fluid communication with an inlet  
10 end of the straight bore wherein the tube and body member in combination define  
11 an annular channel around the tube and a plurality of radially spaced outlet ports  
12 distributed around a central outlet port.
- 1           2.     The nozzle of claim 1 wherein the body member is stainless steel.
- 1           3.     The nozzle of claim 1 wherein the outlet end of the body member  
2 defines the radially spaced outlet ports and a center bore of a size to receive and  
3 engage the tube such that fluid communication through the center bore around the  
4 tube is prevented.
- 1           4.     The nozzle of claim 1 wherein the body member defines a single hole  
2 in the outlet end, the nozzle further comprising:

3 a flange member coupled to the tube and concentric with the tube the flange  
4 member engaging a portion of the body defining the single hole, the flange member  
5 for causing annular disbursement of fuel around the central outlet port.

1 5. The nozzle of claim 1 further comprising:  
2 a first coupling member engaging the inlet end of the angular bore and  
3 defining a fuel inlet port; and  
4 a second coupling member engaging the inlet end of the straight bore and  
5 defining an oxidizing agent inlet port, the second coupling member coupled to the  
6 tube.

1 6. The nozzle of claim 5 wherein a flow path of an oxidizing agent within  
2 the nozzle is linear.

1 7. A nozzle comprising:  
2 a body member defining an angular bore and a straight bore;  
3 a first coupling member engaging an inlet end of the angular bore;  
4 a second coupling member engaging an inlet end of the straight bore;  
5 a tube coupled to the second coupling member and substantially concentric  
6 with straight bore wherein the nozzle defines a plurality of radially spaced outlet  
7 ports around a central outlet port.

1 8. The nozzle of claim 7 wherein the central outlet port and the plurality  
2 of radially spaced outlet ports are substantially coplanar.

1           9.     The nozzle of claim 7 wherein the plurality of annularly spaced outlet  
2 ports are defined by the body member.

1           10.    The nozzle of claim 7 wherein the plurality of annularly spaced outlet  
2 ports are defined by a flange member.

1           11.    The nozzle of claim 7 wherein the plurality of annularly spaced outlet  
2 ports are defined by a conjunction of the body member and a flange member.

1           12.    The nozzle of Claim 1 wherein the angular bore intersects the straight  
2 bore at a predetermined angle greater than five degrees from the horizontal defined  
3 by the longitudinal axis of the straight bore.

1           13.    The nozzle of Claim 1 wherein the body member comprises a threaded  
2 region for engaging a manifold port of the internal combustion engine.